

CALIFORNIA NON-FUEL MINERAL PRODUCTION 2019



California
Department of Conservation
California Geological Survey

CALIFORNIA NON-FUEL MINERAL PRODUCTION 2019

By

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Attachments

Attachment 1	Location of Mines: Sand & Gravel (relative density of mines)
Attachment 2	Location of Mines: Construction Materials
Attachment 3	Location of Mines: Industrial and chemical Mineral Materials
Attachment 4	Location of Mines: Metallic and Rare Minerals
Attachment 5	Current Exploration Efforts

INTRODUCTION

This report summarizes non-fuel mineral production in California in 2019. California is one of the largest producers of non-fuel minerals in the United States. Non-fuel minerals comprise a variety of commodities produced by mining, but exclude fuel commodities like coal and oil shale. In addition to 2019 production data, this report includes production trends for a select number of commodities. In cases where a small number of mines produce a specific commodity, production data are withheld to protect proprietary company information. Production data made available to the public by the mining company are not considered proprietary.

This report is based on annual production data reported to the California Department of Conservation's Division of Mine Reclamation (DMR). All mines regulated under the Surface Mining and Reclamation Act of 1975 (SMARA, Public Resources Code, Sections 2710-2796) are required to report production annually. In general, mines that will remove at least 1,000 cubic yards of overburden or mineral product, or disturb at least one acre of land, are regulated by SMARA. Since not every small mining operation is regulated by SMARA, there may be a minor amount of production not accounted for in this report.

Based on data from the DMR, 661 mines reported production greater than zero. Figure 1 shows the number of producing mines trend. Thirty-four non-fuel mineral commodities were reported to the DMR. These commodities are divided into the following three categories for this report based on the California State Mining and Geology Board (SMGB) Guidelines for Classification and Designation of Mineral Lands (SMGB, 2000):

- Construction materials
- Industrial and chemical mineral materials
- Metallic and rare minerals

The first section of this report is organized by these three mineral categories. Commodities that might fall under multiple categories were placed in the category most commonly identified with their end use. For example, pumice may be more commonly used as a construction material but may also be used as an industrial mineral. The second section is a summary of current mineral exploration for metallic and rare minerals, and borates. The third section contains three corrections to the 2018 report. The fourth section of this report contains references relied upon. The fifth section consists of five map attachments, including the locations of producing mines by category, the density of sand and gravel mines, and the location of current exploration projects. The sixth section is an appendix containing tables with the data used to generate the figures in this report.

Prior to the Non-Fuel Mineral Production 2018 report, the California Geological Survey (CGS) Annual Non-Fuel Mineral Production reports were based mostly on data provided by the U.S. Geological Survey (USGS). The USGS data relied on for previous reports included production data and unit prices for either the mined mineral (e.g., limestone) or an end-use commodity (e.g., cement) and is based on mine operator surveys. For years 2018 and 2019, national average commodity unit prices published by USGS were available, but production data for California were not (except for clinker cement). Because the end-use of a mineral is not reported to the DMR, in some cases its value cannot be calculated with the available unit price data from the USGS. Additionally, because commodities reported to the DMR and USGS do not match in many cases, this report cannot compare data reported to the DMR with past annual non-fuel reports based on the USGS data. This report does not include a total mineral production value, which was featured in reports prior to 2018. In the future, the CGS anticipates collecting additional data from mine operators that will allow for an estimate of the total mineral production value.

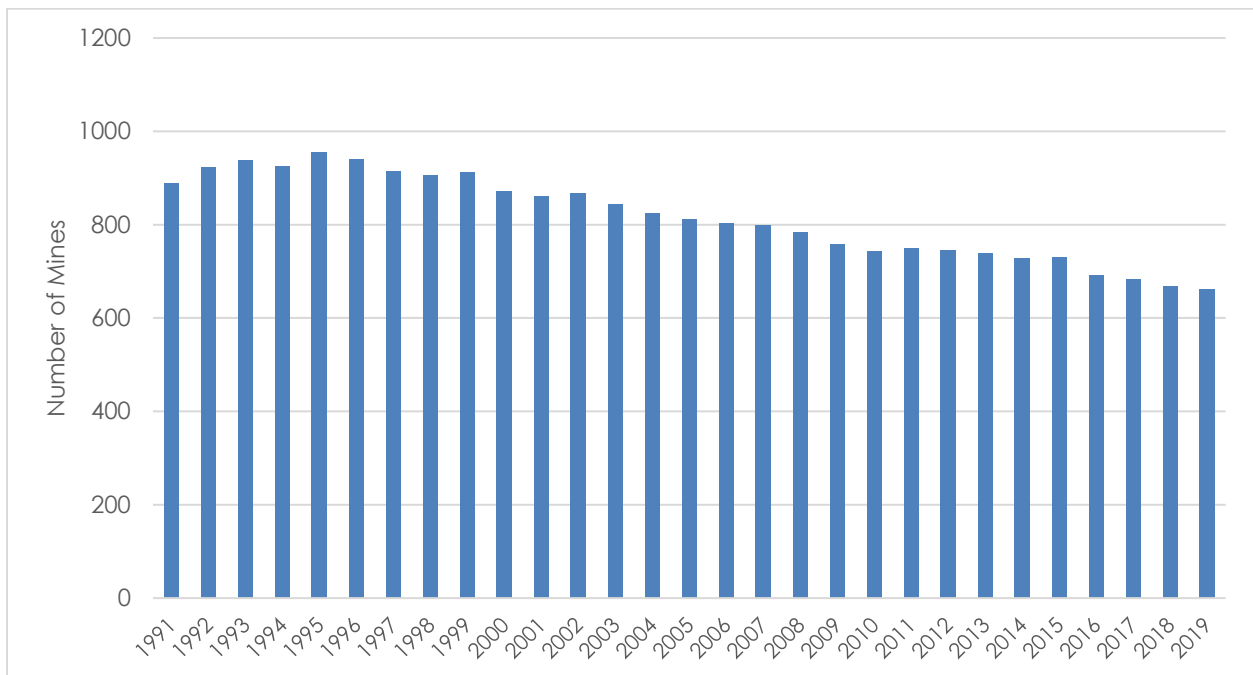


Figure 1. Number of producing mines trend

PRODUCTION BY MINERAL CATEGORY

Construction Materials

In 2019, construction materials included nine commodities produced by 560 mines. Table 1 summarizes the commodities and production.

Table 1. Construction materials 2019 production summary

Commodity	Number of Mines	Production (short tons)
Cinders	16	323,385
Decomposed Granite	38	962,550
Decorative Rock	20	171,547
Dimension Stone	3	1,830,949
Fill Dirt	23	1,695,665
Pumice	5	169,286
Rock	30	2,274,077
Sand and Gravel	365	111,319,287
Stone	60	10,785,211

Sand and gravel is produced throughout the state and comprises the majority of construction materials production. California was second in the nation (behind Texas) in the production of construction sand and gravel (USGS, 2020a). Sand and gravel production was 111 million short tons from 365 mines. The value of sand and gravel was approximately \$938 million, based on the USGS estimated national average unit price of \$8.43 per short ton (USGS, 2021). Figure 2 shows the sand and gravel production trend starting with 1991 (production data were inconsistently reported to DMR in 1990 and is not used in this report). Attachment 1 shows the relative density of sand and gravel mines throughout the state.

Other reported construction materials include cinders, decomposed granite, decorative rock, pumice, and rock. Figure 3 shows production trends of these other construction materials. Data for individual commodities before 1996 were not included to protect proprietary information. Attachment 2 shows the location of mines that produced construction materials other than sand and gravel in 2019.

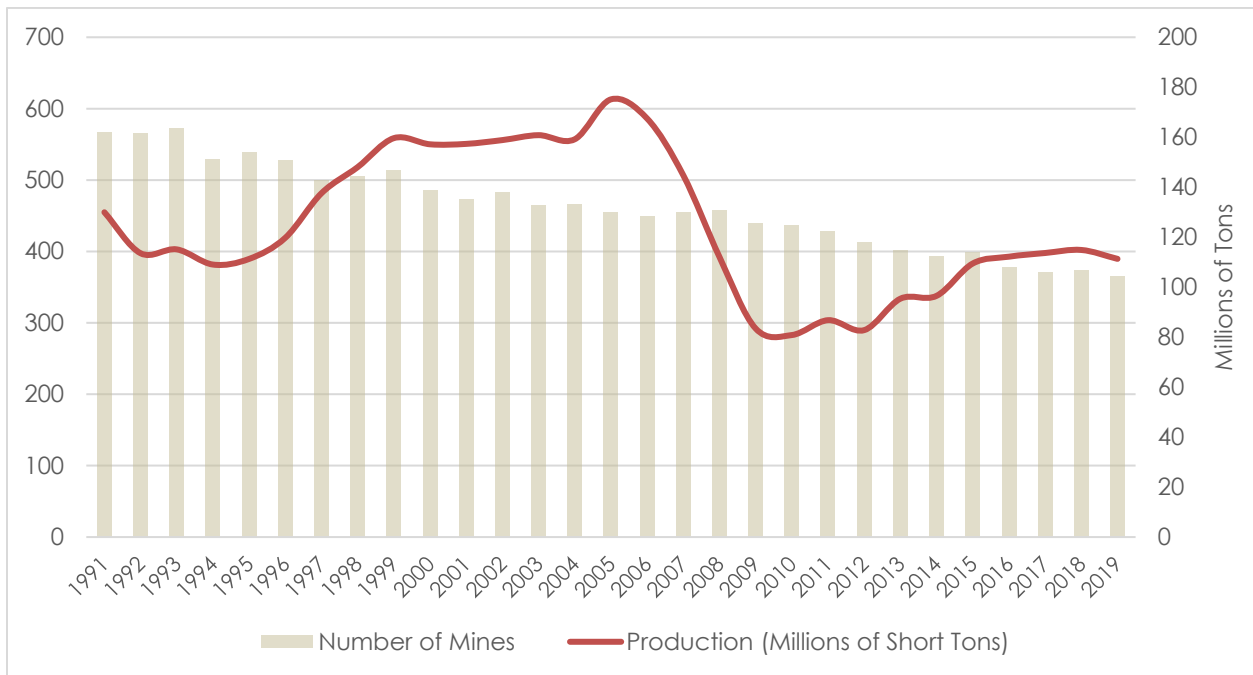


Figure 2. Sand and gravel production trend

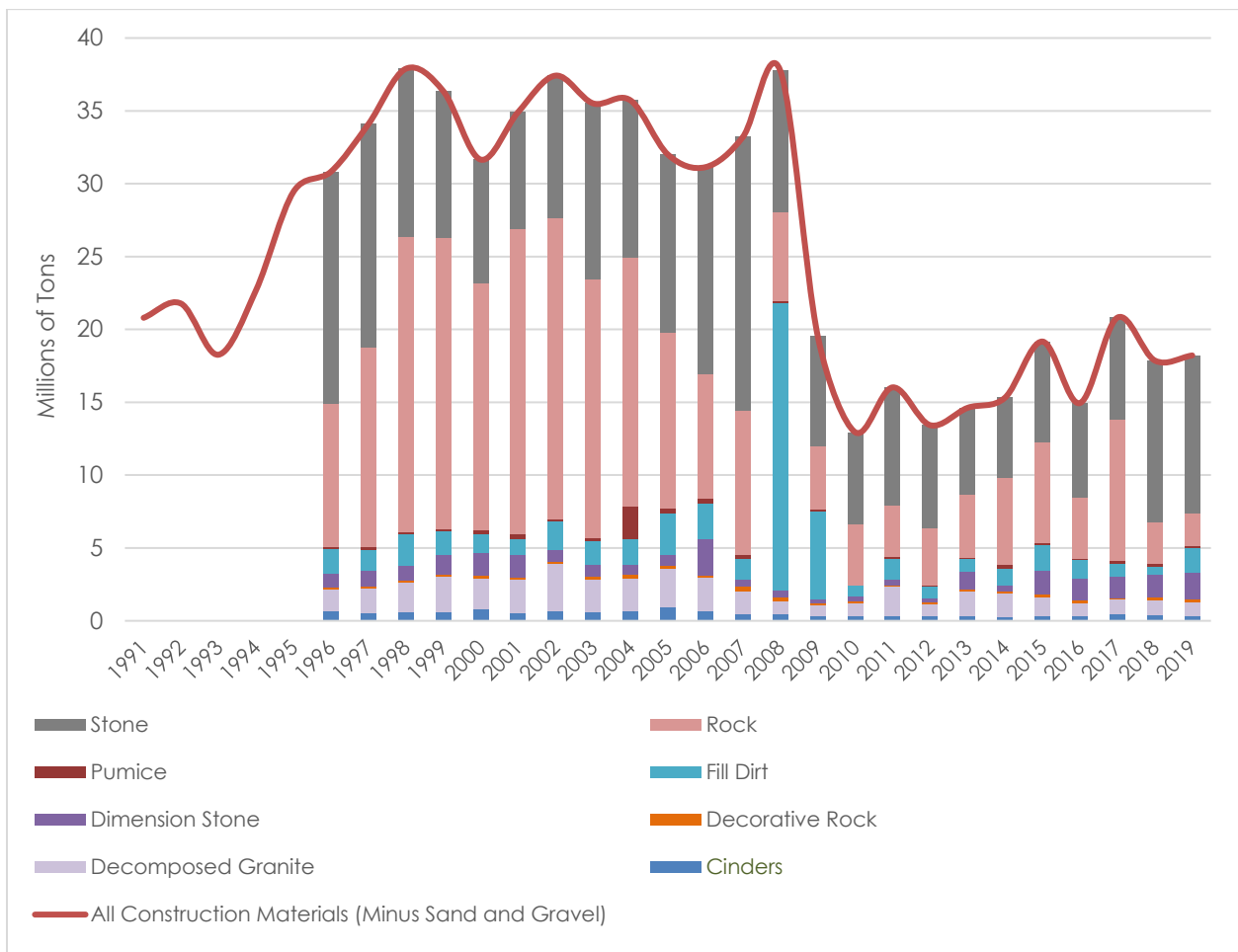


Figure 3. Construction materials (minus sand and gravel) production trends

Industrial and Chemical Mineral Materials

In 2019, industrial and chemical mineral materials included 19 commodities produced by 110 mines. Table 2 summarizes these commodities and the associated production. Attachment 3 shows the location of producers.

Table 2. Industrial and chemical materials 2019 production summary

Commodity	Number of Mines	Production (short tons)
Abrasives	2	W
Borates	2	W
Clay	29	1,015,185
Diatomite	2	W
Dolomite	3	1,189,564
Feldspar	1	W
Gypsum	7	1,561,855
Kyanite	1	W
Lime	2	W
Limestone	26	19,025,675
Saline Compounds	3	1,434,090
Salt	2	W
Sea Shells	1	W
Shale	16	482,402
Silica	3	476,968
Specialty Sand	6	805,824
Talc	1	W
Vermiculite	1	W
Zeolites	2	W

W = Production withheld to protect proprietary information

Limestone production was 19.0 million short tons from 26 mines. Most of the limestone produced in California is used for the manufacture of cement, with the remaining portions produced as crushed rock (a construction material) or as specialty products. The amount of limestone used to manufacture cement is not reported to the DMR; however, according to USGS industry surveys, California clinker cement production was 10.4 million short tons (USGS, 2020b). Using the estimated national unit price of \$112 per short ton provided by the USGS, the total value of cement in California is an estimated \$1.16 billion (USGS, 2021). Figure 4 shows limestone the production trend.

Gypsum production was 1.56 million short tons from seven mines. The value of gypsum was approximately \$12.2 million, based on the USGS estimated national average unit price of \$7.80 per short ton (USGS, 2021). Figure 5 shows the gypsum production trend.

Clay was produced by 29 mines. Clay uses include ceramics, cement production, absorbents, drilling fluid components, landfill liners, and others. Figure 6 shows clay production trends.

Specialty sand production was 806 thousand short tons from five mines. Specialty sands are used for applications other than aggregate, including golf course sand traps, beach volleyball courts, and many others. Figure 7 shows the specialty sand production trend.

Borates were produced by two mines including U.S. Borax's Boron Pit, the largest open pit mine in California (U.S. Borax, 2019).

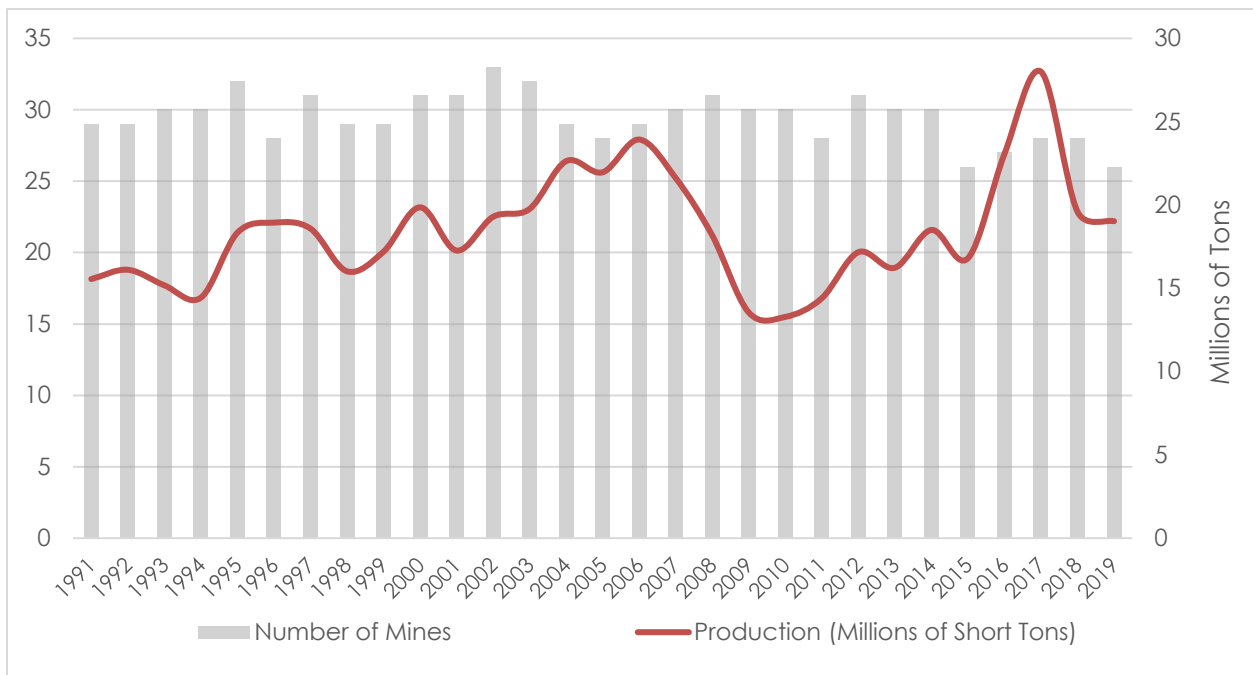


Figure 4. Limestone production trend

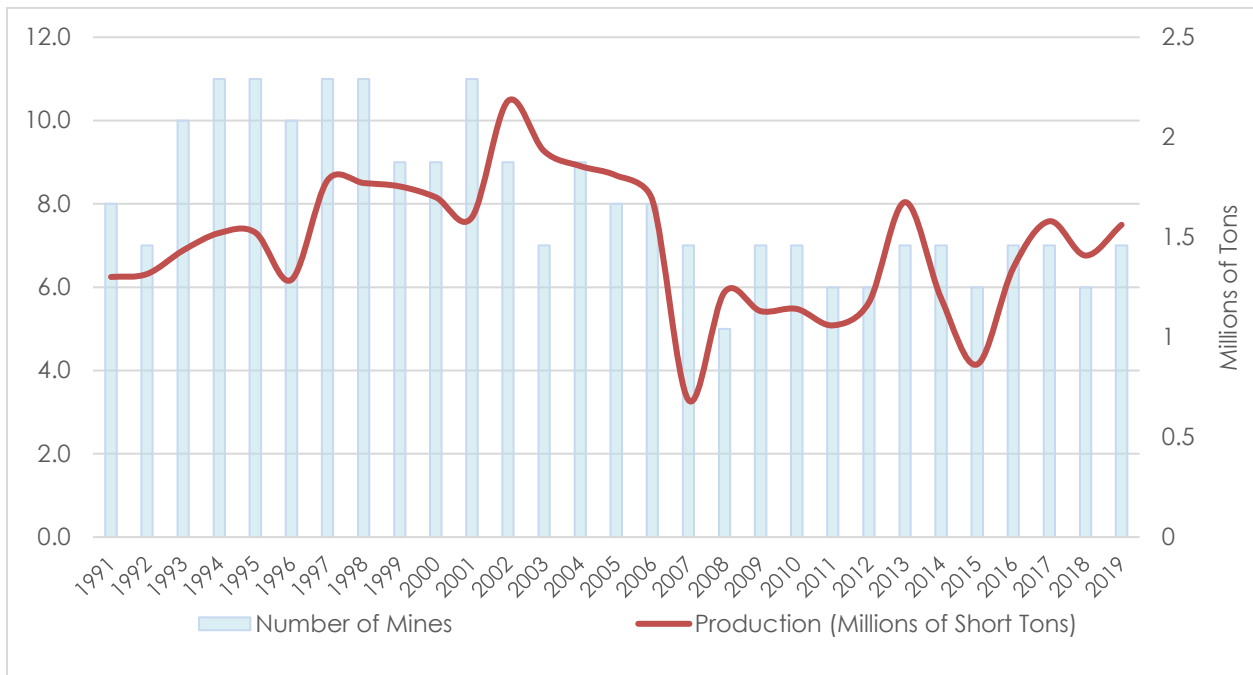


Figure 5. Gypsum production trend

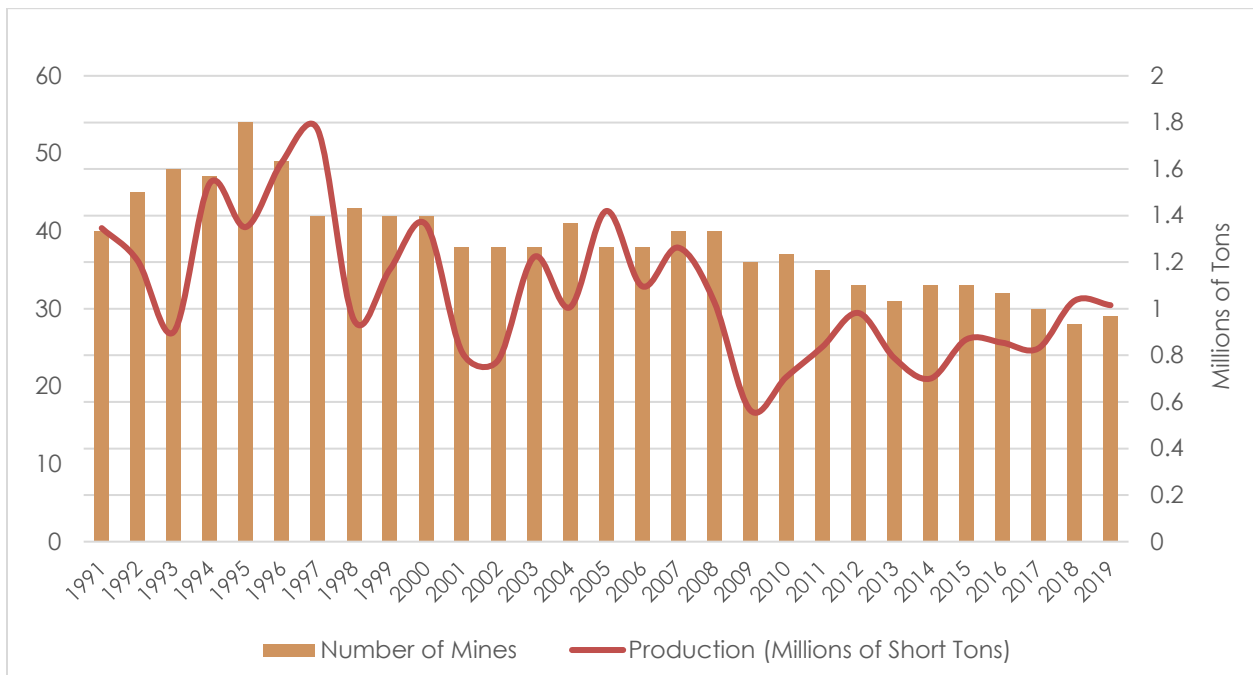


Figure 6. Clay production trend

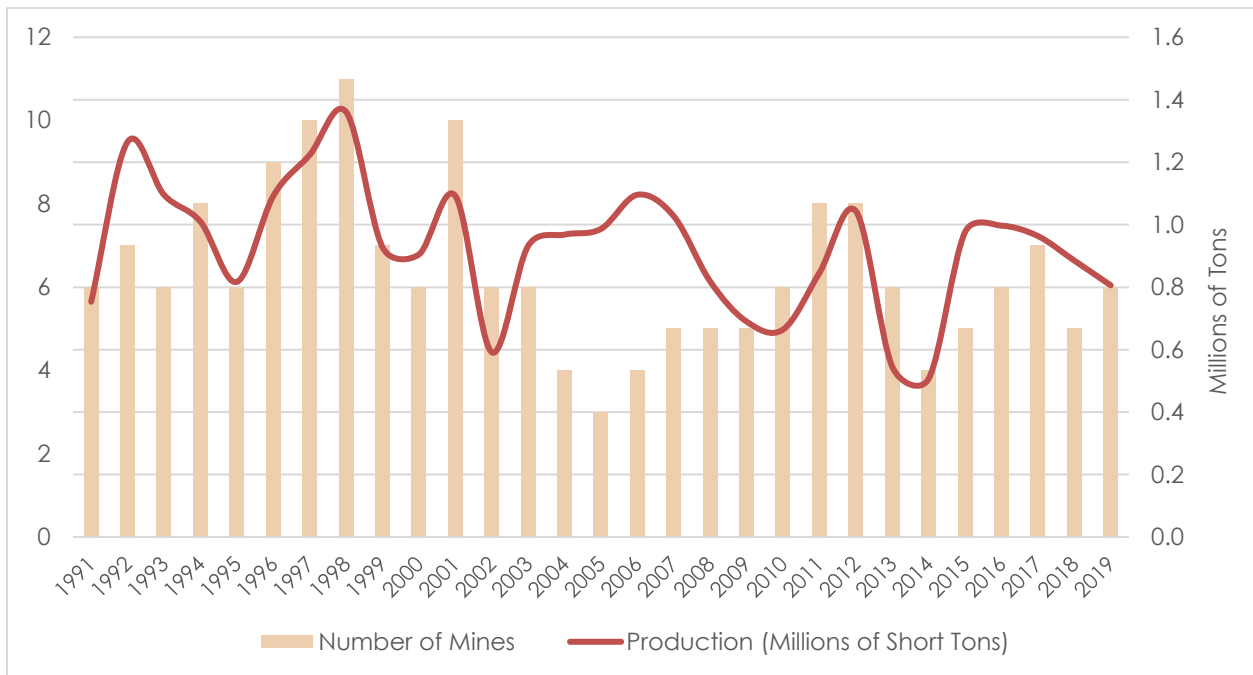


Figure 7. Specialty sand production trend

Metallic and Rare Minerals

In 2019, metallic and rare minerals included six commodities produced by 36 mines in the state. Table 3 summarizes the commodities and production. Attachment 4 shows the location of producers.

Gold production was 183 thousand troy ounces (ounces) from 20 mines, representing a slight production decrease from 2018. The estimated value was \$256 million based on an average price of \$1,395 per ounce (USGS, 2021). The Western Mesquite Mine, an open-pit heap leach mine in Imperial County, led California in gold production with 125,736 ounces (Equinox Gold Corp, 2020). In addition to the four mines that reported gold as a primary commodity, 16 construction materials mines produced gold as a secondary commodity. Those mines accounted for less than three percent of gold production. Figure 8 shows the gold production trend.

Silver production was 500 thousand ounces from nine mines, representing a significant production increase from 2018. The estimated value was \$8.59 million, based on an average price of \$17.17 per ounce (USGS, 2021). All mines that reported silver production also reported gold production. Figure 9 shows the silver production trend.

Iron ore production was 283 thousand short tons from five mines. All primary iron ore production occurred in San Bernardino County.

Rare earth elements were produced at the Mountain Pass Mine in San Bernardino County, the only domestic producer. The mining company, MP Materials, reported sales of 9,437 short tons of rare earth oxides in 2019 (MP, 2021).

Table 3. Metallic and rare minerals 2019 production summary

Commodity	Number of Mines	Production
Gemstones	1	W*
Gold (Lode)	3	178,610 ounces
Gold (Placer)	17	4,845 ounces
Iron Ore	5	283,373 short tons
Rare Earth Elements	1	9,437 short tons**
Silver	9	500,195 ounces

* Production withheld to protect proprietary information

** Sales of rare earth oxides as reported in MP Materials Reports Fourth Quarter and Full Year 2020 Results (MP, 2021)

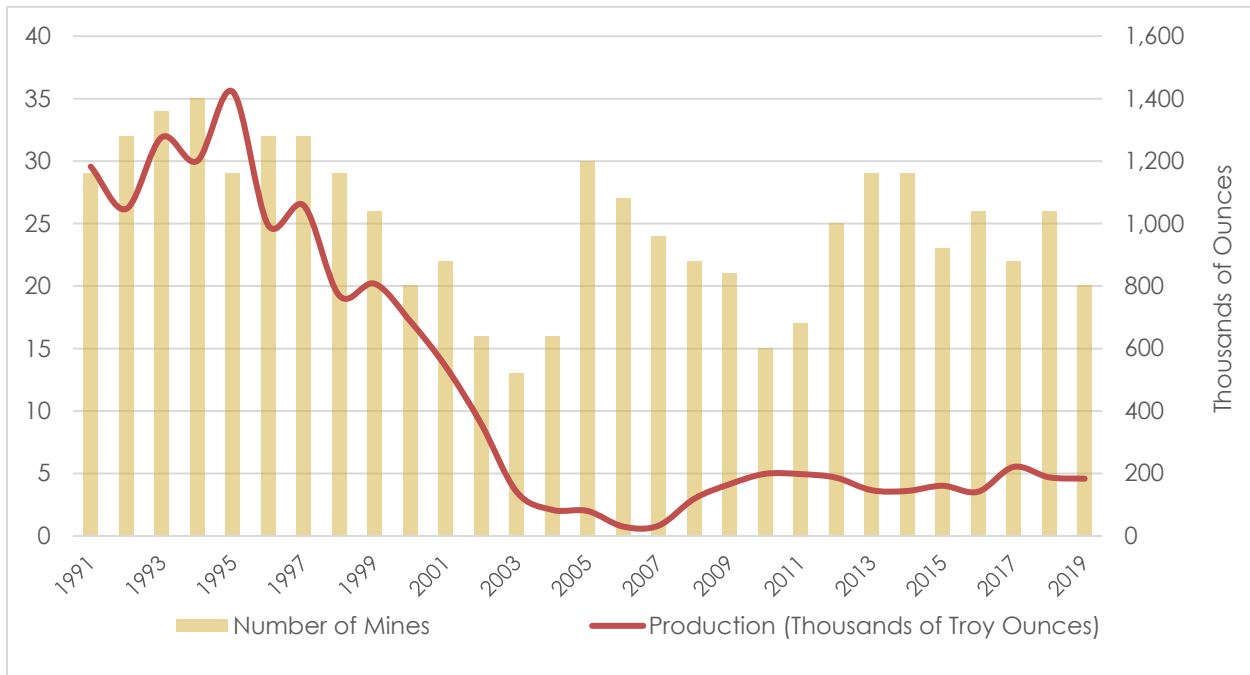


Figure 8. Gold production trend

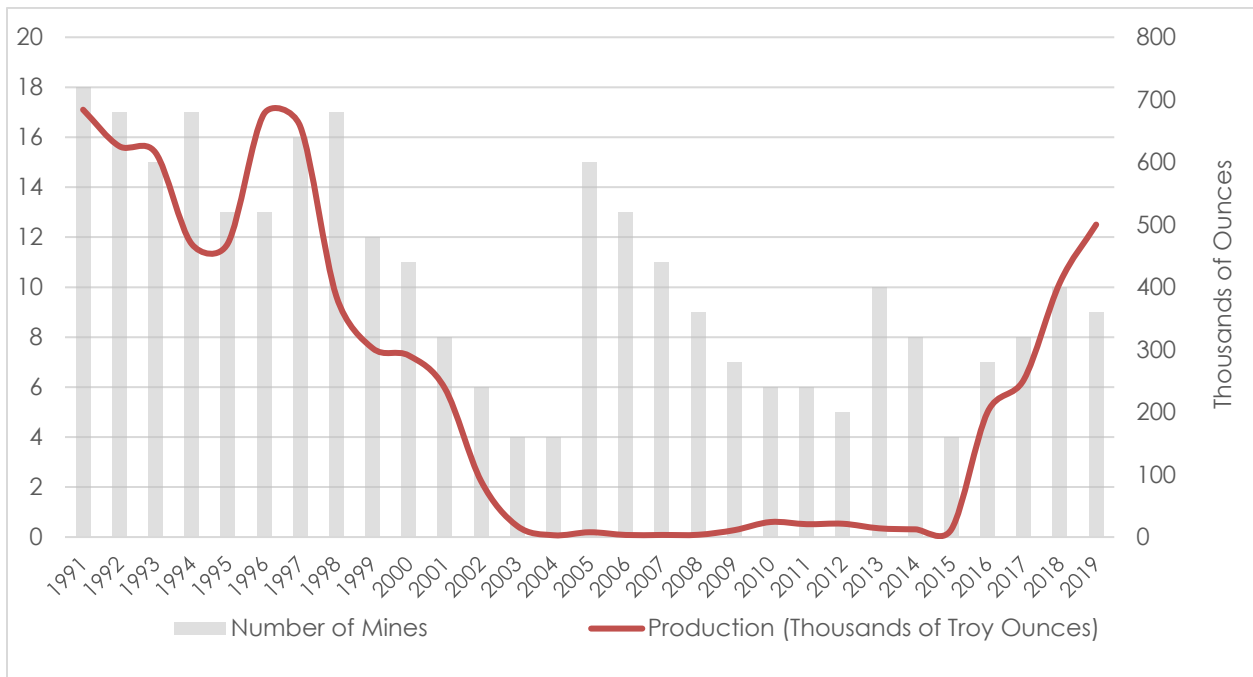


Figure 9. Silver production trend

CURRENT EXPLORATION

As of the first half of 2021, a search of mining publications indicates that there are mineral exploration efforts underway for base metals including copper and zinc, borates, gold and silver, and lithium. Attachment 5 shows the location of the exploration efforts listed below.

Base Metals

The US Copper Corp. Moonlight-Superior and Engels Project is a proposed copper mine in Plumas County. The project includes previously mined areas of Lights Creek. New drilling began in the first half of 2021 and will consist of 12-15 cores. The current estimate of indicated copper resource is 1.3 billion pounds (US Copper Corp, 2021).

The Blue Moon Project is a proposed zinc-silver mine in Mariposa County, 22 miles northeast of Merced. The project is a massive sulfide deposit that would likely be mined underground. Inferred resource estimates have been prepared based on a 2018 drill program (Blue Moon Metals, 2021).

Borates

The American Pacific Fort Cady Project is a proposed borate mine in San Bernardino County. The project consists of a large, underground colemanite deposit with an estimated total resource of 133 million short tons. The company completed an updated Definitive Feasibility Study for the production of boric acid and sulfate of potash using solution mining (American Pacific Borates, 2021).

Gold and Silver

The Apollo Calico Silver Project is a proposed area of silver mining in San Bernardino County. The project consists of the Waterloo and Langtry properties located in the Calico mining district. Additional drilling is proposed for the properties to expand on previous work (Apollo, 2021).

The Kore Imperial Project is a proposed open-pit heap-leach gold mine in Imperial County. The life of mine (LOM) production is estimated to be 1.2 million ounces with a goal of 146,000 ounces produced per year. The company has completed a preliminary economic assessment (PEA) (Kore Mining, 2021a).

The Kore Long Valley Project is a proposed open-pit heap-leach gold mine in Mono County. The project consists of a large, shallow epithermal gold deposit. The project is based on existing drilling data completed before 1997. The LOM production is estimated to be 717,000 ounces with a goal of 102,000 ounces per

year. There is also silver potential within the project area. The company has completed a PEA (Kore Mining, 2021b).

The K2 Mojave Project is an area of proposed drilling targets for gold exploration in Inyo County. The project area also contains zones of anomalous base metals and copper (K2 Gold, 2021). The project area is located south to southeast of the historical Cerro Gordo mine and ghost town.

The Rise Gold Idaho-Maryland Mine Project is the proposed reopening of the historical Idaho-Maryland gold mine in Nevada County. The proposed project would be underground-only and include gravity/flotation processing of ore (Rise Gold, 2021).

The Southern Empire Oro Cruz Project is an area of gold exploration in Imperial County. The project area covers historical open-pit mines in the Cargo Muchacho Mountains including the American Girl Mine, American Boy Mine, and the Padre y Madre Mine. Southern Empire is working towards drilling permitting for new exploration (Southern Empire, 2021).

Lithium

The Rio Tinto Group's U.S. Borax Boron Pit in Kern County began extracting battery-grade lithium from waste rock in April 2021 in its demonstration plant. Rio Tinto will assess the feasibility of a production plant with a 5,000 ton per year initial capacity (Rio Tinto, 2021).

At least two companies are proposing extraction of lithium from lithium-bearing brines in the Salton Sea area in Imperial County. Lilac Solutions is proposing an ion exchange system (Lilac Solutions, 2021). Lithium One is proposing a "Vacuum Membrane Distillation" system (Lithium One, 2021).

2018 REPORT CORRECTIONS

The California Non-Fuel Mineral Production 2018 report contained incorrect total values and unit prices for sand and gravel and gypsum. The corrected total value for sand and gravel is \$953 million with a unit price of \$8.29 per short ton. The corrected total value for gypsum is \$10.6 million with a unit price of \$7.73 per short ton. Additionally, the 2018 report count of the total number of mines that produced greater than zero considered a mine that produced multiple commodities as multiple mines. This report counts mines that produce multiple commodities as one mine, resulting in a lower total number of mines. The 2018 report total number of mines would have been 668 using the revised method instead of 739.

For any questions about this report or the data relied upon, please contact Greg Marquis at (916) 322-9207 or greg.marquis@conservation.ca.gov

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APPENDIX

The following tables represent the data used to generate the report trend figures.

Data for Figure 1. Number of producing mines trend

Year	Number of Mines
1991	963
1992	994
1993	1010
1994	987
1995	1015
1996	1016
1997	987
1998	985
1999	984
2000	929
2001	931
2002	919
2003	906
2004	886
2005	896
2006	888
2007	888
2008	871
2009	840
2010	818
2011	826
2012	818
2013	810
2014	793
2015	796
2016	767
2017	757
2018	739
2019	723

Data for Figure 2. Sand and gravel production trend

Year	Number of Mines	Production (short tons)
1991	567	129,968,983
1992	565	113,570,056
1993	573	115,120,753
1994	529	109,045,312
1995	539	111,303,604
1996	528	119,755,283
1997	499	137,593,428
1998	505	148,040,277
1999	514	159,634,531
2000	485	157,167,215
2001	473	157,335,506
2002	483	158,854,129
2003	464	160,822,204
2004	466	159,187,913
2005	454	175,151,644
2006	449	167,464,187
2007	454	144,746,154
2008	458	112,058,791
2009	440	83,437,525
2010	436	80,837,158
2011	428	86,789,328
2012	412	82,813,351
2013	401	95,391,396
2014	393	96,534,589
2015	399	109,474,469
2016	377	112,202,102
2017	370	113,670,641
2018	374	114,885,833
2019	365	111,319,287

Data for Figure 3. Construction materials (minus sand and gravel) production trend

The data for figure three is divided into two tables below (A and B). The value for each mineral (and the total of all construction materials) is the production in millions of short tons.

Table A

Year	Cinders	Decomposed Granite	Decorative Rock	Dimension Stone	Fill Dirt
1991	n/a	n/a	n/a	n/a	n/a
1992	n/a	n/a	n/a	n/a	n/a
1993	n/a	n/a	n/a	n/a	n/a
1994	n/a	n/a	n/a	n/a	n/a
1995	n/a	n/a	n/a	n/a	n/a
1996	642,048	1,538,246	151,835	899,340	1,736,086
1997	542,698	1,702,521	153,182	1,030,120	1,469,812
1998	625,045	2,017,775	163,232	985,734	2,198,925
1999	614,380	2,403,999	166,557	1,372,744	1,562,211
2000	803,015	2,117,677	189,704	1,538,246	1,355,734
2001	559,590	2,245,864	164,060	1,520,993	1,148,461
2002	682,577	3,207,990	190,617	784,520	1,950,578
2003	644,084	2,185,386	205,970	784,277	1,667,418
2004	665,206	2,264,334	236,989	690,677	1,740,773
2005	951,470	2,623,963	196,688	768,860	2,837,913
2006	671,109	2,285,075	181,747	2,470,431	2,483,011
2007	453,661	1,557,910	365,471	499,480	1,386,823
2008	432,709	919,516	259,714	484,039	19,740,872
2009	311,362	773,939	127,363	287,253	5,997,165
2010	341,561	889,545	109,938	366,544	676,066
2011	312,888	2,030,012	114,621	404,469	1,441,497
2012	315,409	851,268	96,631	338,653	756,990
2013	332,476	1,721,557	109,696	1,211,882	856,521
2014	262,822	1,623,313	151,116	351,681	1,159,274
2015	328,703	1,294,045	176,295	1,621,296	1,804,117
2016	313,419	928,996	160,861	1,490,367	1,262,310
2017	483,313	947,927	148,264	1,484,504	893,504
2018	446,361	957,889	173,034	1,622,603	502,900
2019	323,385	962,550	171,547	1,830,949	1,695,665

Table B

Year	Pumice	Rock	Stone	All Construction Materials (Minus Sand and Gravel)
1991	n/a	n/a	n/a	20,797,337
1992	n/a	n/a	n/a	21,770,506
1993	n/a	n/a	n/a	18,263,983
1994	n/a	n/a	n/a	22,685,538
1995	n/a	n/a	n/a	29,441,687
1996	97,653	9,834,717	15,920,615	30,820,540
1997	187,448	13,665,792	15,328,309	34,079,882
1998	94,693	20,281,945	11,522,297	37,889,646
1999	180,359	19,984,176	10,076,175	36,360,601
2000	214,341	16,962,854	8,473,389	31,654,959
2001	320,961	20,933,755	8,021,826	34,915,510
2002	169,725	20,638,573	9,795,089	37,419,668
2003	182,089	17,758,842	12,087,588	35,515,654
2004	2,213,748	17,071,940	10,838,555	35,722,222
2005	315,425	12,090,864	12,212,534	31,997,716
2006	294,884	8,570,580	14,178,953	31,135,790
2007	244,430	9,934,481	18,763,009	33,205,265
2008	125,002	6,067,288	9,726,919	37,756,058
2009	113,871	4,389,586	7,539,796	19,540,336
2010	64,167	4,216,424	6,277,863	12,942,108
2011	92,994	3,494,418	8,131,221	16,022,119
2012	105,248	3,904,232	7,062,051	13,430,481
2013	114,237	4,311,812	5,958,612	14,616,793
2014	325,213	5,917,484	5,522,879	15,313,782
2015	143,608	6,940,622	6,858,516	19,167,202
2016	135,428	4,177,898	6,474,388	14,943,668
2017	150,332	9,674,927	7,025,864	20,808,634
2018	186,335	2,904,001	11,072,853	17,865,975
2019	169,286	2,274,077	10,785,211	18,212,670

Data for Figure 4. Limestone production trend

Year	Number of Mines	Production (short tons)
1991	29	15,551,962
1992	29	16,109,249
1993	30	15,178,349
1994	30	14,435,661
1995	32	18,332,982
1996	28	18,939,846
1997	31	18,583,916
1998	29	16,019,172
1999	29	17,193,976
2000	31	19,858,315
2001	31	17,264,262
2002	33	19,287,688
2003	32	19,762,348
2004	29	22,631,166
2005	28	21,961,851
2006	29	23,927,899
2007	30	21,615,823
2008	31	18,172,407
2009	30	13,547,114
2010	30	13,281,545
2011	28	14,402,998
2012	31	17,165,891
2013	30	16,231,253
2014	30	18,501,115
2015	26	16,802,443
2016	27	23,063,128
2017	28	27,999,147
2018	28	19,595,243
2019	26	19,025,675

Data for Figure 5. Gypsum production trend

Year	Number of Mines	Production (short tons)
1991	8	1,301,045
1992	7	1,315,942
1993	10	1,434,032
1994	11	1,521,049
1995	11	1,523,018
1996	10	1,287,022
1997	11	1,784,486
1998	11	1,770,807
1999	9	1,753,929
2000	9	1,699,542
2001	11	1,599,047
2002	9	2,181,548
2003	7	1,930,470
2004	9	1,855,849
2005	8	1,808,180
2006	8	1,685,445
2007	7	685,249
2008	5	1,225,550
2009	7	1,130,081
2010	7	1,141,109
2011	6	1,058,766
2012	6	1,173,625
2013	7	1,675,296
2014	7	1,194,710
2015	6	863,564
2016	7	1,346,436
2017	7	1,579,730
2018	6	1,408,230
2019	7	1,561,855

Data for Figure 6. Clay production trend

Year	Number of Mines	Production (short tons)
1991	40	1,346,284
1992	45	1,205,461
1993	48	900,621
1994	47	1,538,658
1995	54	1,350,789
1996	49	1,628,641
1997	42	1,767,649
1998	43	951,796
1999	42	1,168,922
2000	42	1,362,020
2001	38	813,733
2002	38	778,387
2003	38	1,222,324
2004	41	1,006,478
2005	38	1,419,411
2006	38	1,096,590
2007	40	1,262,464
2008	40	1,030,008
2009	36	564,550
2010	37	706,625
2011	35	836,042
2012	33	981,822
2013	31	788,011
2014	33	700,151
2015	33	868,413
2016	32	854,049
2017	30	830,169
2018	28	1,034,195
2019	29	1,015,185

Data for Figure 7. Specialty sand production trend

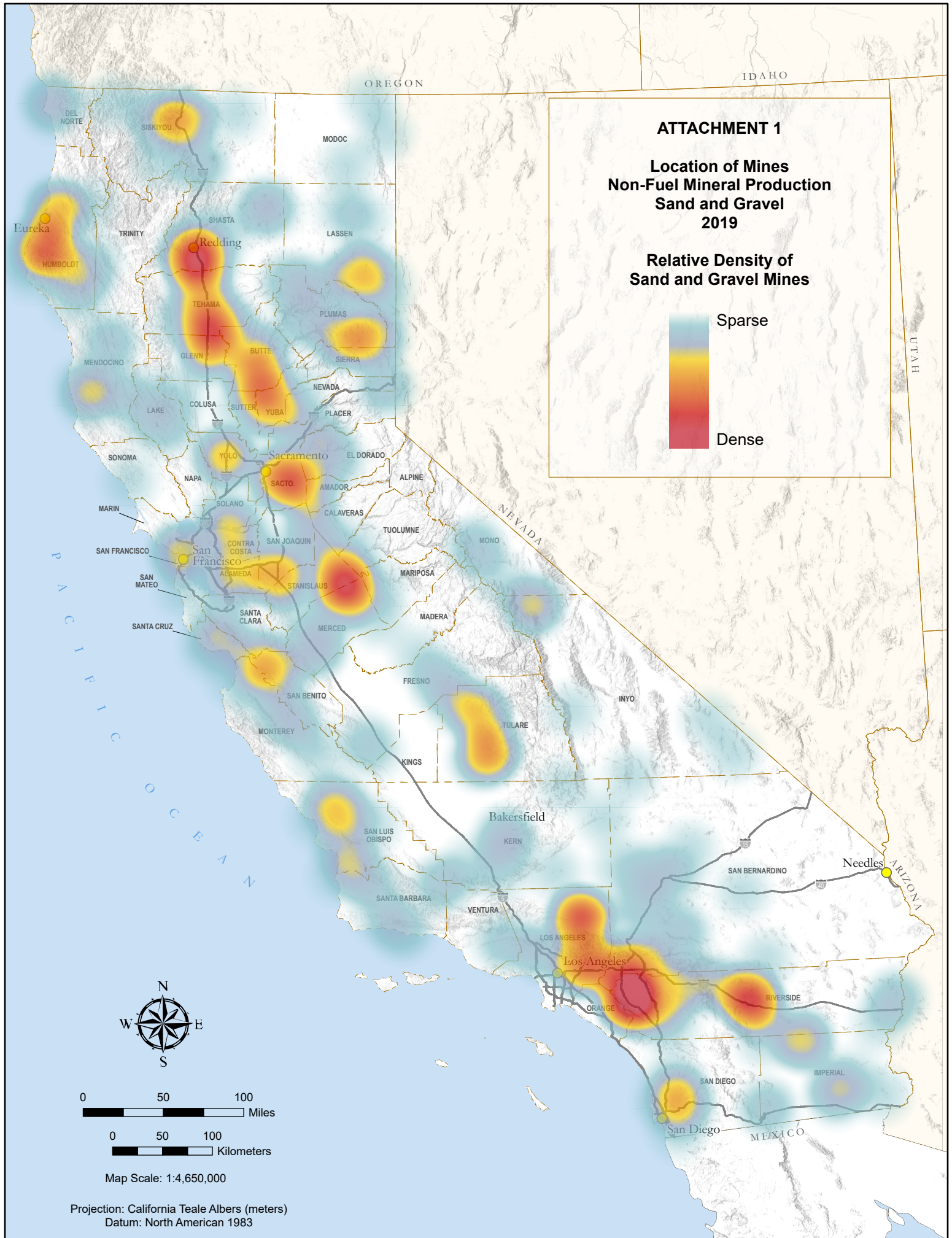
Year	Number of Mines	Production (short tons)
1991	6	753,420
1992	7	1,265,283
1993	6	1,095,358
1994	8	1,009,768
1995	6	816,918
1996	9	1,091,700
1997	10	1,223,179
1998	11	1,361,148
1999	7	927,883
2000	6	904,710
2001	10	1,092,178
2002	6	591,637
2003	6	932,026
2004	4	968,330
2005	3	986,418
2006	4	1,095,792
2007	5	1,027,093
2008	5	818,171
2009	5	689,779
2010	6	664,211
2011	8	845,899
2012	8	1,043,644
2013	6	545,221
2014	4	506,836
2015	5	976,410
2016	6	996,845
2017	7	963,564
2018	5	885,012
2019	6	805,824

Data for Figure 8. Gold production trend

Year	Number of Mines	Production (troy ounces)
1991	29	1,182,567
1992	32	1,047,135
1993	34	1,276,494
1994	35	1,200,469
1995	29	1,422,156
1996	32	994,868
1997	32	1,058,169
1998	29	769,781
1999	26	807,605
2000	20	687,861
2001	22	542,576
2002	16	359,201
2003	13	141,055
2004	16	83,661
2005	30	80,010
2006	27	30,110
2007	24	33,161
2008	22	119,090
2009	21	165,842
2010	15	198,986
2011	17	198,057
2012	25	186,594
2013	29	146,463
2014	29	144,123
2015	23	160,767
2016	26	141,659
2017	22	221,110
2018	26	187,890
2019	20	183,455

Data for Figure 9. Silver production trend

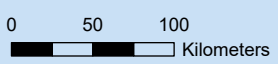
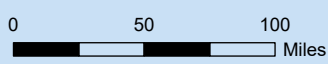
Year	Number of Mines	Production (troy ounces)
1991	18	684,054
1992	17	625,607
1993	15	615,400
1994	17	469,189
1995	13	469,986
1996	13	677,425
1997	16	657,591
1998	17	385,311
1999	12	302,299
2000	11	290,608
2001	8	237,936
2002	6	89,561
2003	4	17,619
2004	4	2,915
2005	15	7,698
2006	13	3,345
2007	11	3,397
2008	9	3,664
2009	7	11,061
2010	6	24,093
2011	6	20,604
2012	5	21,325
2013	10	13,998
2014	8	12,376
2015	4	12,454
2016	7	200,227
2017	8	251,786
2018	10	407,559
2019	9	500,195



ATTACHMENT 1

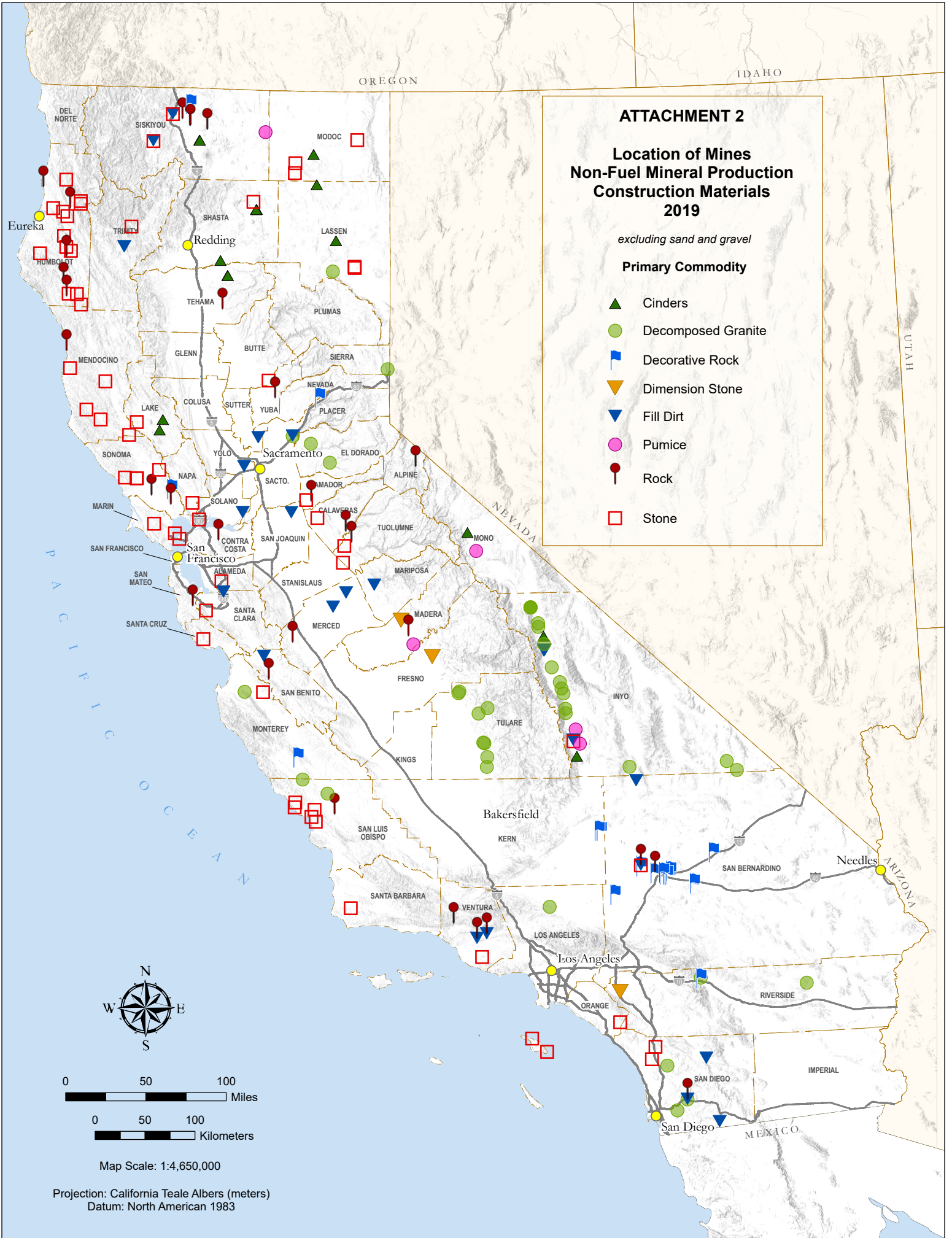
**Location of Mines
Non-Fuel Mineral Production
Sand and Gravel
2019**

**Relative Density of
Sand and Gravel Mines**



Map Scale: 1:4,650,000

Projection: California Teale Albers (meters)
Datum: North American 1983




OREGON

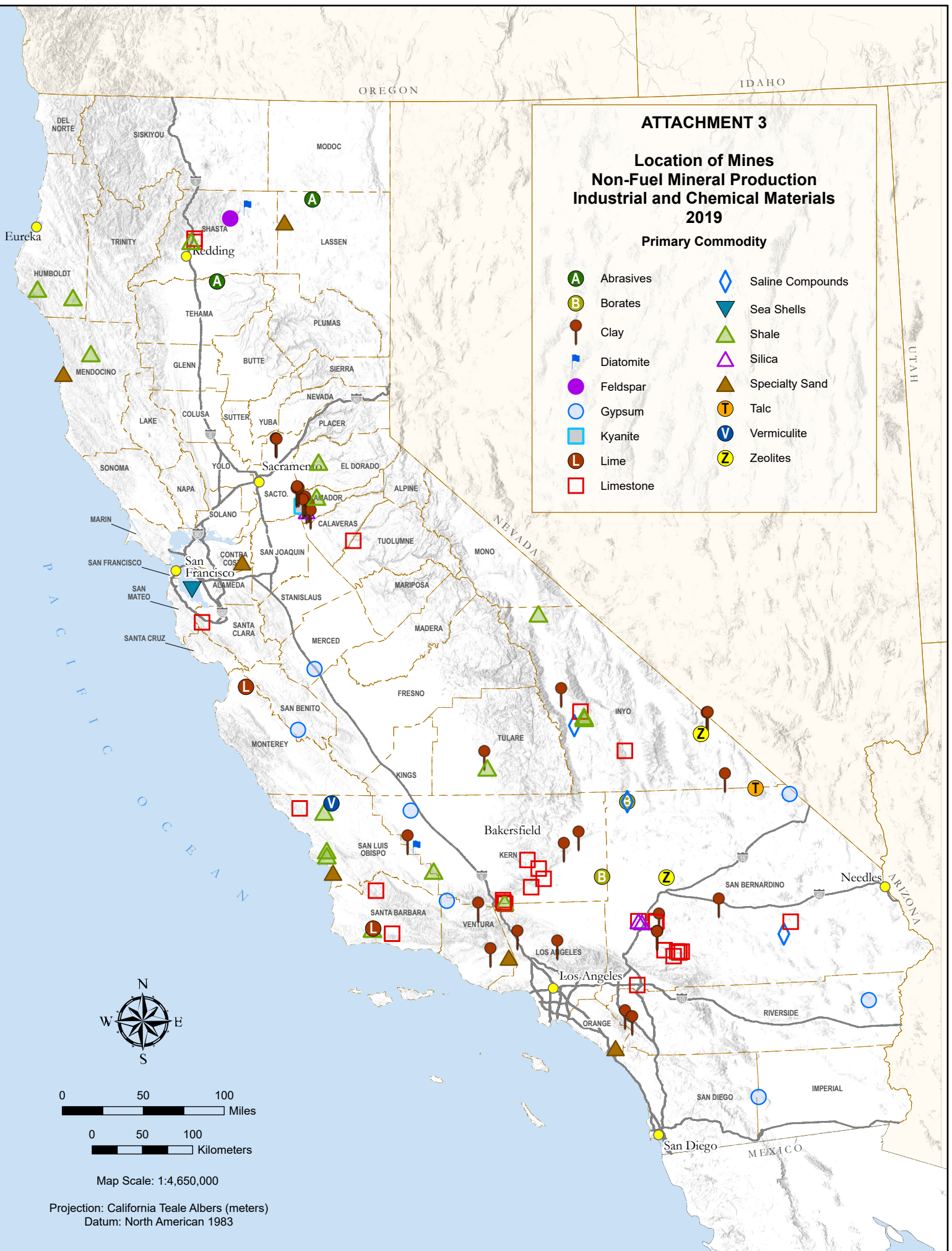
IDAHO

ATTACHMENT 3

Location of Mines Non-Fuel Mineral Production Industrial and Chemical Materials 2019

Primary Commodity

- | | | | |
|---|-----------|---|------------------|
|  | Abrasives |  | Saline Compounds |
|  | Borates |  | Sea Shells |
|  | Clay |  | Shale |
|  | Diatomite |  | Silica |
|  | Feldspar |  | Specialty Sand |
|  | Gypsum |  | Talc |
|  | Kyanite |  | Vermiculite |
|  | Lime |  | Zeolites |
|  | Limestone | | |



0 50 100 Miles

0 50 100 Kilometers


Map Scale: 1:4,650,000

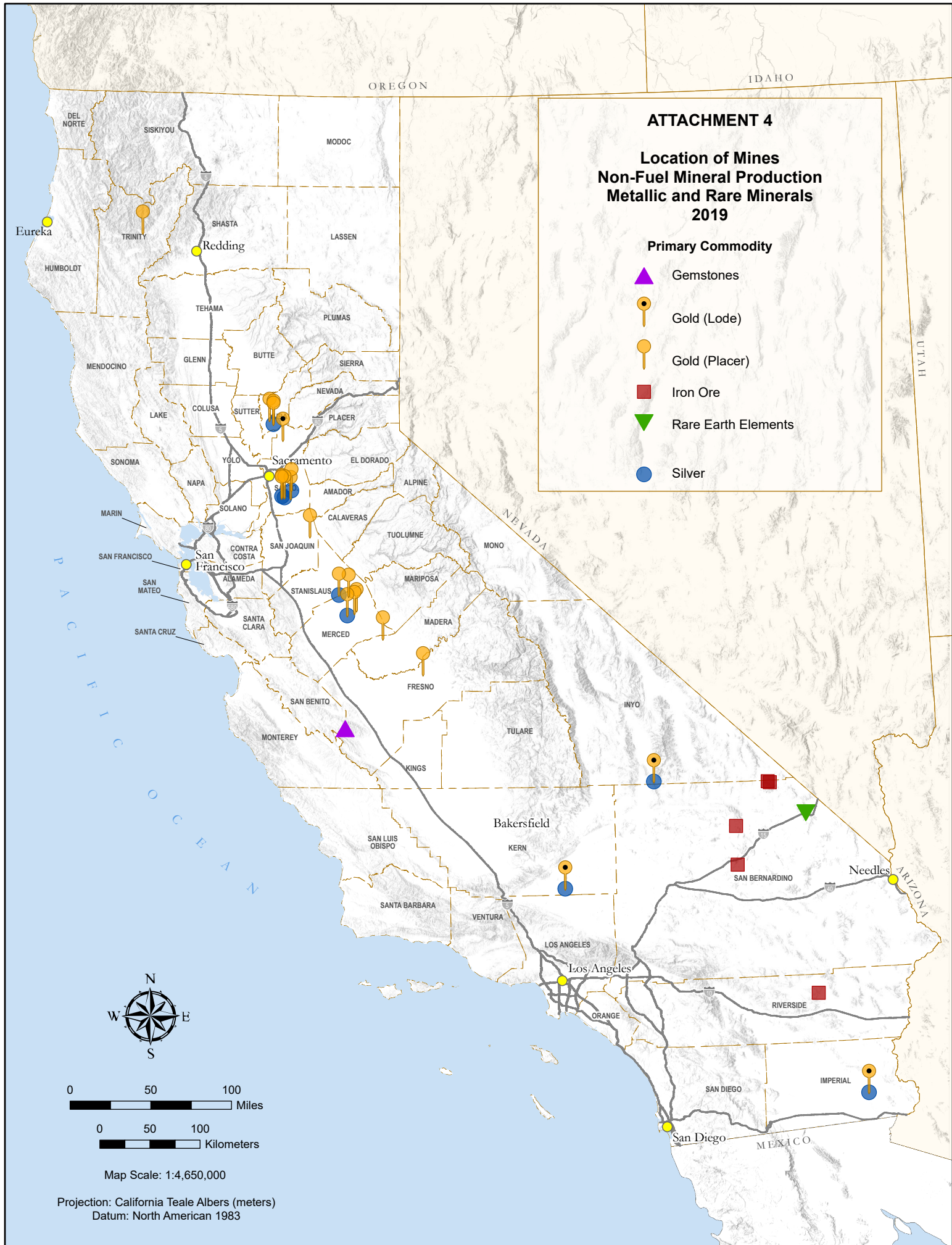
Projection: California Teale Albers (meters)
Datum: North American 1983

ATTACHMENT 4

Location of Mines Non-Fuel Mineral Production Metallic and Rare Minerals 2019

Primary Commodity

-  Gemstones
-  Gold (Lode)
-  Gold (Placer)
-  Iron Ore
-  Rare Earth Elements
-  Silver

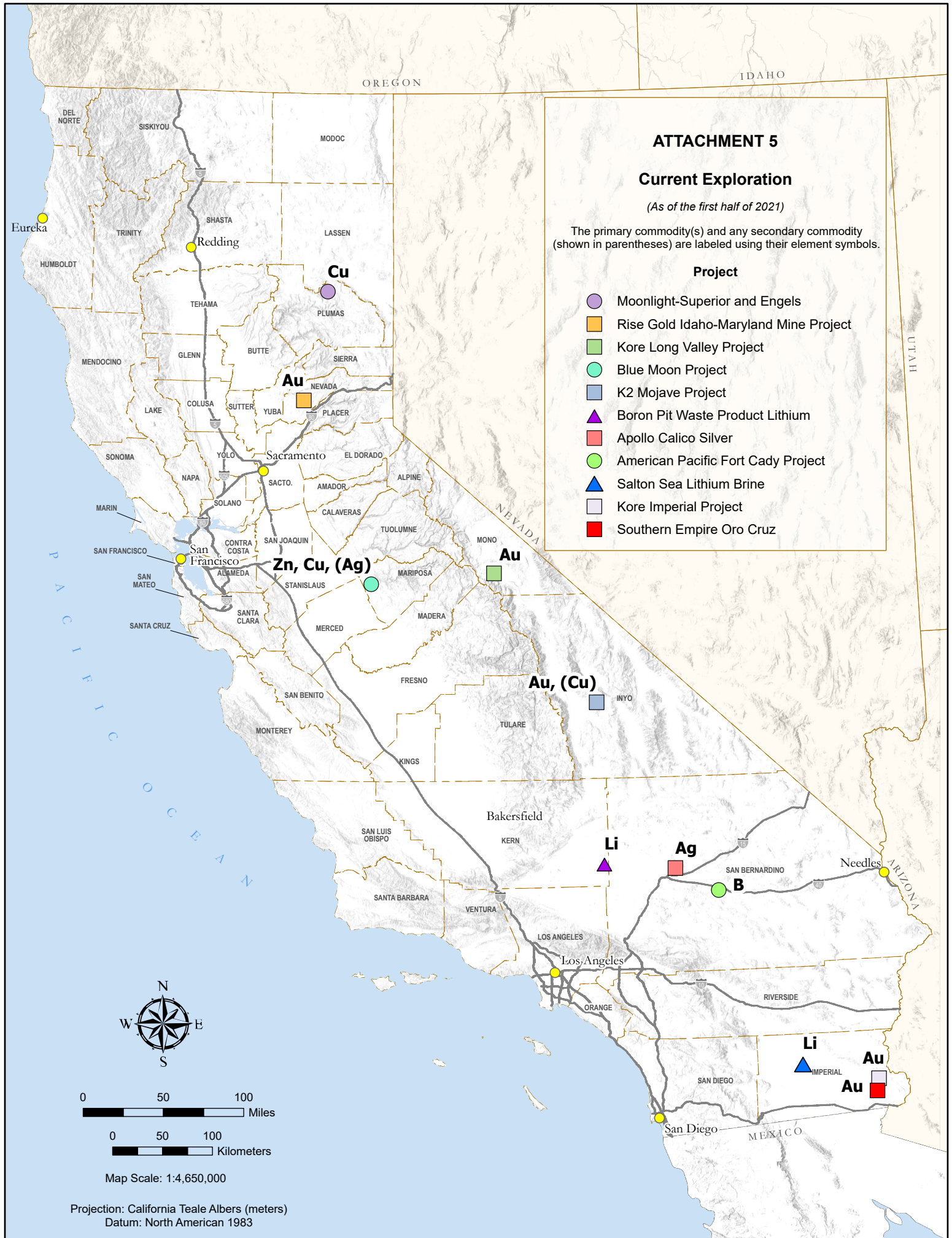


0 50 100 Miles

0 50 100 Kilometers

Map Scale: 1:4,650,000

Projection: California Teale Albers (meters)
Datum: North American 1983



ATTACHMENT 5

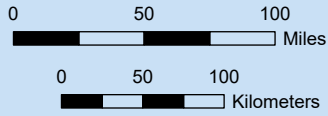
Current Exploration

(As of the first half of 2021)

The primary commodity(s) and any secondary commodity (shown in parentheses) are labeled using their element symbols.

Project

- Moonlight-Superior and Engels
- Rise Gold Idaho-Maryland Mine Project
- Kore Long Valley Project
- Blue Moon Project
- K2 Mojave Project
- ▲ Boron Pit Waste Product Lithium
- Apollo Calico Silver
- American Pacific Fort Cady Project
- ▲ Salton Sea Lithium Brine
- Kore Imperial Project
- Southern Empire Oro Cruz



Projection: California Teale Albers (meters)
Datum: North American 1983